

Docket: 010029
PATENT

REMARKS

Before this amendment, claims 1-49 were pending in the present application. In the above amendments, claim 15 has been amended, and claims 1-14, 20-31, and 39-48 have been canceled without prejudice. Claims 15-19, 32-38, and 49 are now pending.

In the Office Action mailed December 09, 2004, the Examiner rejected claims 1-19, 27-31 and 48 under 35 U.S.C. §102(b) as being anticipated by Nadas et al. (US 4,926,488) ("Nadas") and rejected claims 20-26, 32-47 and 49 under 35 U.S.C. §103(a) as being unpatentable over Nadas as applied to claims 1-19, 27-31 and 48, and further in view of Miazawa et al. (US 6,070,139) ("Miazawa"). Applicants respectfully submit that claims 15-19, 32-38, and 49 as amended are allowable over the art cited. Considering claim 15 as a representative claim of independent claims 15, 32, and 49, applicants respectfully submit that claims are not anticipated by either Nadas or Miazawa and are patentable over the Nadas and Miazawa.

An invention is unpatentable if the differences between it and the prior art would have been obvious at the time of the invention. As stated in MPEP § 2143, there are three requirements to establish a prima facie case of obviousness.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

With respect to the third requirement mentioned above, applicants respectfully submit that neither Nadas, nor Miazawa, nor a combination of the two, teach or suggest every limitation of claim 15. As amended, claim 15 recites a remote station apparatus comprising an adaptation engine "configured to produce a set of modified acoustic feature vectors for processing by a voice recognition engine using a central acoustic model larger than the adaptation model." Applicants respectfully submit that Nadas does not discuss this feature. Nowhere in Nadas is a discussion or showing to use a central acoustic model for voice recognition and an adaptation

Attorney Docket No.: 010029
Customer No.: 23696

Docket: 010029**PATENT**

model for forming modified acoustic feature vectors where the central acoustic model is larger than the adaptation model. As discussed in page 9, paragraph 1031 and page 10, paragraph 1036 of the specification of the present application, the limited memory capacity of a remote station requires the acoustic model within the remote station to be relatively small. In order to maximize the accuracy of speech recognition, embodiments of the present invention utilize a smaller adaptation model to determine a feature vector modification function which is used to create a set of modified acoustic feature vectors. The modified acoustic features are processed by a larger central acoustic model maximizing the speech recognition accuracy.

Further, applicants respectfully submit that neither Miazawa, nor a combination Nadas and Miazawa, teach or suggest all of the elements of claim 15. Miazawa discusses utilizing a conversion rule to convert a speaker's speech feature parameters to a corresponding standard speaker's feature information. Miazawa, however, does not teach or suggest to produce a set of modified acoustic feature vectors using an adaptation model and to use a larger central acoustic model for processing the set of modified acoustic feature vectors with a voice recognition engine. Accordingly, applicants respectfully submit that the neither Nadas nor Miazawa, nor a combination of the two, teach or suggest every limitation of any of claims 15-19, 32-38, or 49.

With respect to the first requirement for non-obviousness recited above, no suggestion exists to combine the cited prior art sources. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that the cited prior art is only combined in retrospect, in light of the present invention. That is, the obviousness rejection is based upon characterization of Nadas and Miazawa in view of the applicants' own invention description. Applicants respectfully submit that the Examiner has combined the references by observing that Nadas does not teach or suggest applying selected feature vector modification functions at a remote station to form a set of modified acoustic feature vectors for processing by a voice recognition engine at a communications center and that Miazawa includes a limited discussion of bifurcating voice

Docket: 010029
PATENT

recognition functions between a user terminal and a speech processor of a main speech recognition unit. There is no suggestion in either reference to combine the references.

Finally, the Examiner has not set forth any evidence or reasoning to establish reasonable expectation that Nadas and Miazawa, when combined, will succeed in a voice recognition system where modified acoustic feature vectors produced at a remote station using an adaptation model are processed with a voice recognition engine using a larger central acoustic model. Simply combining the two references results in a system that still experiences the prior art problems resulting from limited processing power in a remote station to accurately recognize speech. Applying the technique discussed in Nadas within a remote station requires extensive processing power. The combination of altering an operator function to minimize speech recognition inaccuracies in a speech processor discussed in Nadas and the distributed voice recognition in Maizawa does not solve processing limitations in remote stations and speech recognition inaccuracies associated with voice transmissions in wireless communication systems.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

Attorney Docket No.: 010029
Customer No.: 23696